

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 July 2002 (11.07.2002)

PCT

(10) International Publication Number
WO 02/053902 A1

(51) International Patent Classification⁷: **F02M 31/02**

(21) International Application Number: **PCT/KR01/00185**

(22) International Filing Date: 8 February 2001 (08.02.2001)

(25) Filing Language: **Korean**

(26) Publication Language: **English**

(30) Priority Data:
2000/0085084 29 December 2000 (29.12.2000) **KR**

(71) Applicant and

(72) Inventor: **LIM, Soonja** [KR/KR]; #332, Hawangshipri-
ldong, Sungdong-gu, Seoul 133-021 (KR).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **AN, Seungbae**
[KR/KR]; #103, Yangji-Mansion, 172-29, Daejo-dong,
Unpyong-gu, Seoul 122-841 (KR).

(74) Agent: **HWANG, Byungdo**; Rm 206, Regent Building -,
#547-8, Kuui-dong, Kwangjin-gu, Seoul 143-709 (KR).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,
DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS,
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO,
NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

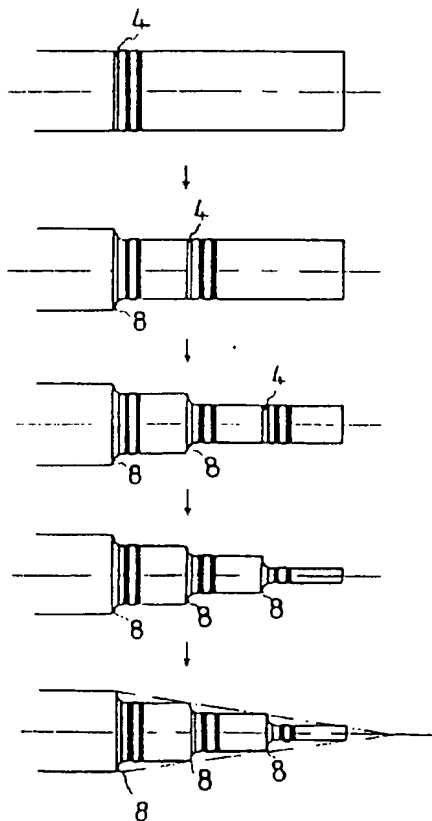
Published:

— with international search report

[Continued on next page]

(54) Title: A METHOD OF MANUFACTURING A REACTION CORE THAT INDUCES A CONVERSION OF FUEL

(57) Abstract: A method of manufacturing the reactor core for reducing fuel consumption of an internal-combustion engine, which induces fuel of the internal-combustion engine to the plasma state and maintains it, the forward part is inclined according to the degree of ignition by checking the start spot of partial ignition.



WO 02/053902 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A method of manufacturing a reaction core that induces a conversion of fuel

Background of the invention

5

Field of the Invention

The present invention is related to a device for reducing the fuel consumption of cars and more particularly to a method of manufacturing the reactor core used for maintaining as an active fuel, after the liquid fuel, which is heat-exchanged with the waste gas of high temperature, is transformed as a plasma state at the stage of activation.

In recent times, inducing the activation of fuel by heat-exchange with the waste gas is used for cars, which fuel the diesel oil, in order to provide fuel easily in winter, however, this kind of method is nothing but making easy to ignite by raising the temperature of fuel.

15 Thus, the molecule formation of fuel is transformed and induced as an active gaseous body, and finally transformed as sublimate gaseous status, so that the perfect combustion can be made.

Nevertheless, it is impossible to transform the base molecule formation of fuel at the one's discretion, and in case of not maintaining the transformation to the active gaseous body, some problems like partial ignition can be occurred at the climax due to acceleration of the conflict between fluids.

20 The prior art could not be used as an active gaseous body in the plasma status

for reducing fuel consumption of an internal-combustion engine, of which the reason was that production and maintenance the activated fuel was impossible.

That is because fuel is flowed into the combustion room, since the active gaseous body in the plasma status is ignited by that the partial ignition can be occurred
5 at the climax due to acceleration of the conflict between fluids.

Discussion of Related Art

The incline is made by the mark line, which is made by connected sills at a
10 regular depth, and the incline of the fuel pipe maintains the status as sublimate gaseous molecule status by increasing the volume on the basis of the start point of the partial ignition, which is occurred at the climax due to the acceleration of the conflict between fluids.

15 Brief Description of the Attached Drawings

FIG. 1 is a processing view of the manufacturing process according to the embodiment of the present invention;

FIG. 2 is a state view of the present invention; and

20 FIG. 3 is sectional view of using the reactor core.

Detailed Description of Preferred Embodiment

The following is the detailed description of the most desirable embodiment of the present invention. The most desirable embodiment of this invention will be described in detail according to the attached drawings on the following and the same reference number will be used to mean the same drawing elements regardless of different drawings.

As shown in FIG. 1 and 2, a fuel pipe (20) is fixed by a supporting board (not shown in Figures) inside of a reactor pipe of the lower temperature plasma (10), which flows the waste gas, and a reactor core (2) is fixed inside of the said fuel pipe (20) in the direction of fuel's flowing by a supporting board (not shown in Figures), and the said fuel pipe (20) has an incline (6) downward to the direction of fuel's flowing.

At this point, when the fuel of the fuel pipe (20), which is across with the waste gas flowing through the reactor pipe of the lower temperature plasma (10), is transformed as the active gaseous body in the changing condition from a vacuum status to the low density status by acceleration, the incline (6) of the reaction core (2) maintains the status as sublimate gaseous molecule status by increasing the volume on the basis of the start point of the partial ignition, which is occurred at the climax due to the acceleration of the conflict between fluids.

For this, the mark line (4) is made at the start point of the partial ignition when the fuel is across with the waste gas, and the mark line (4) has sills (8) at a regular depth, which is connected to each other, so that makes the incline (6).

At this point, each sill can be used as it is, but in this case, fuel cannot be provided exactly, because a state of flux of the sublimate gaseous molecule is changed irregularly.

What is claimed is:

1. A method of manufacturing the reactor core wherein comprising;
a sill, which is formed on a mark line at the start point of the partial ignition
line and connected to each other making an incline.

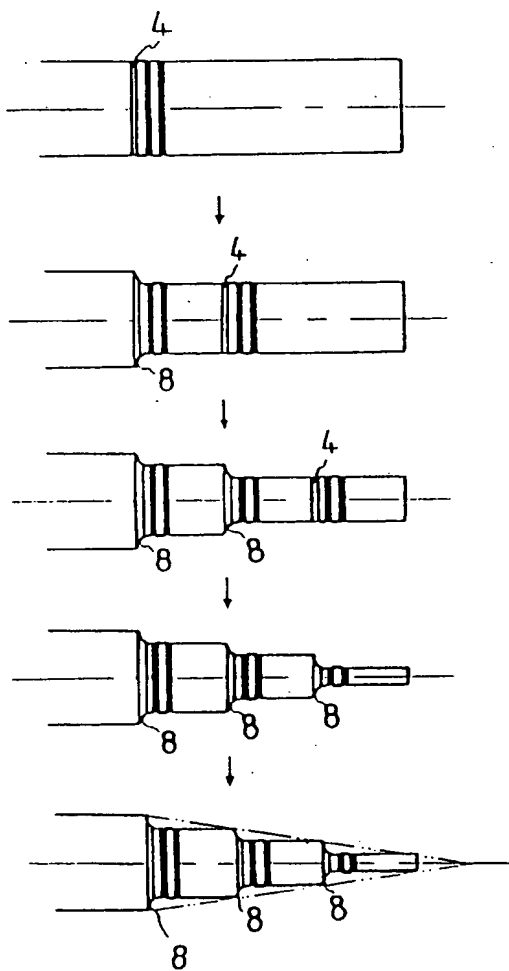
10

15

20

1/2

Fig. 1



2/2

Fig. 2

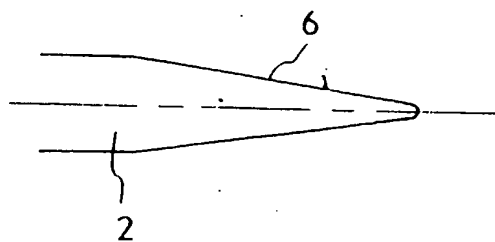
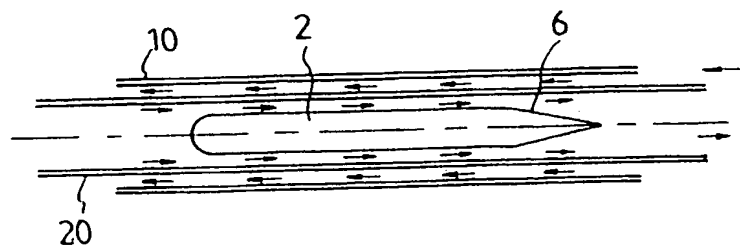


Fig. 3



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR01/00185

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 F02M 31/02**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 F02M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patents and applications for inventions since 1947. Korean Utility models and applications for Utility models since 1947.
Japanese Utility models and application for Utility models since 1974.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NPS

"fuel". "exhaust". "gas". "plasma". "reaction". "core".

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP6-346807A(AQUEOUS RES. KK) 20 DECEMBER 1994 See entire document.	1
A	JP58-18548A(TOKYO TATSUNO LTD.) 3 FEBRUARY 1983 See entire document.	1
A	JP57-46059A(SUMITOMO HEAVY IND. LTD.) 16 MARCH 1982 See entire document.	1
A	JP60-75752A(MITSUBISHI ELECTRIC CORP.) 30 APRIL 1985 See entire document.	1



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

25 SEPTEMBER 2001 (25.09.2001)

Date of mailing of the international search report

27 SEPTEMBER 2001 (27.09.2001)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, Dunsan-dong, Seo-gu, Daejeon
Metropolitan City 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

SOHN, Sung Ho

Telephone No. 82-42-481-5477

